

Comments and responses on the draft TMDLs for sediment in Goose Creek

Comments from LCSA:

1. The TMDL report indicates that the average annual sediment loads from all the wastewater treatment facilities in the watershed contribute less than 0.014% of the current total sediment load (and 0.022% of the TMDL target load) for the creek. Obviously, this is an insignificant load to Goose Creek. In addition, sediment from WWTP's meeting secondary treatment levels is mostly in a suspended form which not deposited on the stream bed (and therefore does not contribute to benthic impairment). The cap on WWTP's does not appear to be scientifically justified.

The initial approach taken in developing the draft TSS allocations for Goose Creek was that it would be difficult to justify allowing room for growth in some sources while calling for reductions in others. DEQ has changed this approach based on comments received from wastewater treatment plants (WWTPs) in the watershed and on the relatively small portion of the total TSS load that is attributable to these sources. The simulation of WWTPs in the watershed has been changed to allow an expanded WLA up to five times the current permit limits. We hope that this approach will address the concerns of WWTP operators while at the same time raising awareness of the need to control TSS entering Goose Creek and its tributaries.

2. The TMDL process recommends that allowances for growth be included in the load allocation. It would seem that the TMDL plan for Goose Creek should have a non-restrictive load allocation plan for WWTP's that could accommodate growth. Given the imperceptible nature of the WWTP load, a growth allocation for this source would have no impact on the cost or methodology of the sediment reduction plan currently proposed in the TMDL.

The TMDL process requires that all sources of a pollutant be considered in developing load allocations, and that separate allocations be developed for point and nonpoint sources. The TMDL is therefore required to include a maximum load allocation for point sources, including WWTPs. A non-restrictive load allocation would not be consistent with TMDL requirements. DEQ is attempting to allow for growth in the watershed by including scenarios based on the Loudoun County General Plan and by simulating permitted discharges at five times their current limits. Growth in the watershed should, however, be managed taking into account the potential impacts on instream water quality and benthic macroinvertebrate populations.

3. The end point load allocation was derived in the study through the use of a reference stream. This was probably the best method that could be currently achieved given the

inexact nature of a benthic impairment determination, however, it is very possible that benthic organisms in Goose Creek could recover with a less stringent load allocation. This inexact determination of total load is another reason that the strict cap on sediment from WWTP's does not make rational sense given the real and significant cost impacts that tightened solids limits could have on existing or new facilities.

It is DEQ's intention to assess the success or failure of the TMDL based on continued biological and water quality monitoring. The loading allocations and percent reductions in the TMDL are simply a guide for steps needed to address the impairment. DEQ hopes that the revised approach to WWTP allocations, allowing for up to five times the current loads, will avert any significant cost impacts on new or existing facilities in the watershed, while raising the awareness of the need to control TSS entering Goose Creek and its tributaries

Comments from the Town of Purcellville:

1. The purpose of this letter is to respond to the proposed TMDL standards for the Goose Creek. It is our understanding that you are considering imposing a Total Suspended Solids (TSS) Loading limit on the Basham Simms Wastewater Facility (BSWF) at our current permitted limit. As you know, at the BSWF, our current TSS limit is 12 mg/l. At the plant's maximum capacity, this is a total loading of 18.3 tons for the year. This TSS limit is very low and requires tertiary treatment using filtration in order to meet this limit.

Your proposal to impose this permitted limit for TSS loading of 18.3 tons per year as a permanent limit will greatly impact the Town's ability to increase the discharge from this facility. As a growing community we must look to the future when the capacity of the plant might need to be increased to accommodate zoned growth within the Town. Under this proposed limit, if the BSWF doubled in capacity, the TSS limit would need to be reduced from 12 mg/l to 6 mg/l. It is very possible that additional treatment in the form of membrane technology would be needed to meet this very stringent requirement. This type of treatment would be very expensive.

The initial approach taken in developing the draft TSS allocations for Goose Creek was that it would be difficult to justify allowing room for growth in some sources while calling for reductions in others. DEQ has changed this approach based on comments received from wastewater treatment plants (WWTPs) in the watershed and on the relatively small portion of the total TSS load that is attributable to these sources. The simulation of WWTPs in the watershed has been changed to allow an expanded WLA up to five times the current permit limits. We hope that this approach will address the concerns of WWTP operators while at the same time raising awareness of the need to control TSS entering Goose Creek and its tributaries.

2. It is our understanding that the only stream data collected for the Goose Creek was at the point where the creek crosses Rte 7 in Leesburg. If this is the case then you have very little data demonstrating where the introductions for sediment are occurring and where it begins to have a deleterious effect on the stream. Based on the documents provided there does not appear to be any specific data that directly correlates the BSWF as a significant contributor to the sediment loads. Therefore it seems inappropriate to impose limits of the solids loading for the BSWF.

DEQ has conducted biological monitoring at three locations in the Goose Creek watershed: 1AGOO002.38 (Goose Creek at Route 7), 1AGOO044.36 (Goose Creek at Route 17) and 1ALIV004.78 (Little River at Route 50). Two of these stations showed an impairment of the benthic community (1AGOO002.38 and 1ALIV004.78), while one showed no impairment (1AGOO044.36). These data are what led to the assessment of the Lower Goose Creek and Little River as impaired. Because the most downstream station on Goose Creek is impaired, sources throughout the entire watershed could potentially be contributing to the impairment and must be accounted for in the TMDL, regardless of how far upstream they are from the impaired segment.

3. Based on the average annual sediment loads from different sources, it appears that all of the wastewater treatment facilities in the watershed contribute less than 0.014% of the total sediment loading for the creek. It does not appear that the wastewater facilities are contributing significantly to the overall sediment load of the creek and it does not appear that the controlling of this sediment load will correct the benthic issues with the creek. The Town would be interested in any back up information you might have that would demonstrate a correlation of the BSWF solids loading with the benthic difficulties.

The TMDL process requires that all sources of a pollutant be considered in developing load allocations, and that separate allocations be developed for point and nonpoint sources. The TMDL is therefore required to include a maximum load allocation for point sources, including WWTPs. DEQ does not have data specifically linking the BSWF with the benthic impairment on Goose Creek. In recognition of comments received from wastewater WWTPs in the watershed and on the relatively small portion of the total TSS load that is attributable to these sources, the simulation of WWTPs in the watershed has been changed to allow an expanded WLA up to five times the current permit limits.

4. The type of sediment that comes from a wastewater treatment plant would be very different from the sediment caused by erosion. You indicated to the Director of Utilities, Karin Franklin, on the phone that the type of solids that seems to be causing the benthic degradation is due to sediments that settle easily. The solids being discharged from the BSWF are the solids that do not settle easily as we remove our solids through a settling process. It would therefore appear that the solids discharged from the BSWF are not the type of solids that would have an impact on the benthic community.

EPA guidance requires development of TMDLs based on the best available data and recommends the use of TSS as a surrogate for sediment. Sediment TMDLs must therefore take all sources of TSS into account.

5. If such additional limits are to be imposed on the facility, it is felt that the regulations should be accompanied by funding. Based on the other issues identified above, it would be difficult to justify the increase in user fees necessary to install the additional treatment needed to meet the imposed limits of the facility were to expand. As it appears that the imposed limit will not address the area of concern, the Town does not feel it is logical or appropriate to spend additional money to increase the treatment to meet these stricter limits.

The TMDL allocations have been changed to allow room for growth in WWTP discharges. The additional allocation will be assigned to new and existing permits on a first come, first served basis. All current permit limits are still in effect and any expansions of existing permits must be reviewed and approved by DEQ.

Comments from the Town of Round Hill:

1. The purpose of this letter is to respond to the proposed TMDL standards for the Goose Creek. It is our understanding that you are considering imposing a Total Suspended Solids (TSS) Loading limit on all facilities including the Town of Round Hill's WWTP at our current permitted limit. As you know, at the Town of Round Hill's WWTP, our current TSS limit is 10 mg/l. At the plant's maximum capacity, this is a total loading of 7.61 tons for the year. This TSS limit is very low and requires tertiary treatment using high tech filtration in order to meet this limit.

Your proposal to impose this permitted limit for TSS loading of 7.61 tons per year as a permanent limit will greatly impact the Town of Round Hill's ability in the future to increase the discharge from this facility. As a growing community we must look to the future when the capacity of the plant will need to be increased to accommodate zoned growth within the Town of Round Hill. Under this proposed limit, if the Town of Round Hill doubled in capacity, the TSS limit would need to be reduced from 10 mg/l to 5 mg/l. Our facility will require additional treatment in the form of highly technical, membrane technology to meet this very stringent requirement imposed. This type of treatment would be very expensive to say the least.

The initial approach taken in developing the draft TSS allocations for Goose Creek was that it would be difficult to justify allowing room for growth in some sources while calling for reductions in others. DEQ has changed this approach based on comments received from wastewater treatment plants (WWTPs) in the watershed and on the relatively small portion of the total TSS load that is attributable to these sources. The

simulation of WWTPs in the watershed has been changed to allow an expanded WLA up to five times the current permit limits. We hope that this approach will address the concerns of WWTP operators while at the same time raising awareness of the need to control TSS entering Goose Creek and its tributaries.

2. It is our understanding that the only stream data collected for the Goose Creek was at the point where the creek crosses Rte 7 in Leesburg. If this is the case then you have very little data demonstrating where the introductions for sediment are occurring and where it begins to have a deleterious effect on the stream. Based on the documents provided there does not appear to be any specific data that directly correlates the Town of Round Hill's WWTP as a significant contributor to the sediment loads. Therefore it seems inappropriate to impose limits of the solids loading for the Town of Round Hill's WWTP.

DEQ has conducted biological monitoring at three locations in the Goose Creek watershed: 1AGOO002.38 (Goose Creek at Route 7), 1AGOO044.36 (Goose Creek at Route 17) and 1ALIV004.78 (Little River at Route 50). Two of these stations showed an impairment of the benthic community (1AGOO002.38 and 1ALIV004.78), while one showed no impairment (1AGOO044.36). These data are what led to the assessment of the Lower Goose Creek and Little River as impaired. Because the most downstream station on Goose Creek is impaired, sources throughout the entire watershed could potentially be contributing to the impairment and must be accounted for in the TMDL, regardless of how far upstream they are from the impaired segment.

3. Based on the average annual sediment loads from different sources, it appears that all of the wastewater treatment facilities in the watershed contribute less than 0.014% of the total sediment loading for the creek. It does not appear that the Town of Round Hill's wastewater facilities are contributing significantly to the overall sediment load of the creek and it does not appear that the controlling of this sediment load will correct the benthic issues with the creek. The Town of Round Hill would be interested in any back up information you might have that would demonstrate a correlation of it's WWTP solids loading with the benthic difficulties.

The TMDL process requires that all sources of a pollutant be considered in developing load allocations, and that separate allocations be developed for point and nonpoint sources. The TMDL is therefore required to include a maximum load allocation for point sources, including WWTPs. DEQ does not have data specifically linking the BSWF with the benthic impairment on Goose Creek. In recognition of comments received from wastewater WWTPs in the watershed and on the relatively small portion of the total TSS load that is attributable to these sources, the simulation of WWTPs in the watershed has been changed to allow an expanded WLA up to five times the current permit limits.

4. The type of sediment that comes from a wastewater treatment plant would be very different from the sediment caused by erosion. You indicated in an earlier conversation to the Town of Purcellville, Director of Utilities, Karin Franklin, that the type of solids that seems to be causing the benthic degradation is due to sediments that settle easily. The solids being discharged from the WWTP's are the solids that do not settle easily as we remove our solids through a settling process. It would therefore appear that the solids discharged from the WWTP's are not the type of solids that would have an impact on the benthic community.

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